
**Japanese Unexamined Utility Model Application,
First Publication No. H5-37328
Date of First Publication: May 21, 1993**

Int. Cl.		Id. No.	Internal Serial No.
B 01 D	63/02		6953-4D
	65/02	520	8014-4D
C 02 F	1/44	K	8014-4D

**Request for Examination: None
Number of Claims: 3**

**Japanese Utility Model Application No. H3-86108
Application Date: October 22, 1991**

Title of the Invention: HOLLOW FIBER MEMBRANE MODULE

**Applicant: 000006035
Mitsubishi Rayon Co., Ltd.**

**Inventor: Hisayoshi YAMAMORI
c/o Mitsubishi Rayon Co., Ltd.**

**Inventor: Masumi KOBAYASHI
c/o Mitsubishi Rayon Co., Ltd.**

**Inventor: Yoshiro NIEDA
c/o Mitsubishi Rayon Co., Ltd.**

Description

1. Title of the Invention

Hollow Fiber membrane Module

2. Claims

[Claim 1] A hollow fiber membrane module that is fabricated by evenly dispersing and packing a hydrophilic porous hollow fiber membrane A and a hydrophobic porous hollow fiber membrane B at a weight ratio of A:B = 1:0.2 - 2.

[Claim 2] A hollow fiber membrane module according to claim 1, characterized in being fabricated by a knitted hydrophilic porous hollow fiber membrane and hydrophobic porous hollow fiber membrane being overlaid and rolled into a cylindrical shape.

[Claim 3] A hollow fiber membrane module according to claim 1, characterized in that when air is fed from the filtrate side during backwash cleaning, backwash is carried out by generating air bubbles on the hydrophobic hollow fiber surface.

Brief Description of the Drawings

FIG. 1 is a drawing in which two types of knitted hollow fiber membranes, that is, hydrophilic and hydrophobic hollow fiber membranes, are overlaid, and a schematic drawing of the state in which these have been rolled into a cylindrical shape and potted.

FIG. 2 is a schematic cross-sectional view that shows an example of the module of the present model.

Brief Explanation of the Reference Numbers

- 1 knitted hydrophilic hollow fiber membrane
- 2 knitted hydrophobic hollow fiber membrane
- 3 potting portion
- 4 composite of a hydrophilic hollow fiber membrane and a hydrophobic hollow fiber membrane
- 5 outer tube
- 6 fluid intake portion
- 7 fluid discharge portion
- 8 cross-flow filtering-time circulating fluid outflow portion
- 9 backwash-time air inflow portion

**Japanese Unexamined Utility Model Application,
First Publication No. H5-37328
Date of First Publication: May 21, 1993**

Int. Cl.		Id. No.	Internal Serial No.
B 01 D	63/02		6953-4D
	65/02	520	8014-4D
C 02 F	1/44	K	8014-4D

**Request for Examination: None
Number of Claims: 3**

**Japanese Utility Model Application No. H3-86108
Application Date: October 22, 1991**

Title of the Invention: HOLLOW FIBER MEMBRANE MODULE

**Applicant: 000006035
Mitsubishi Rayon Co., Ltd.**

**Inventor: Hisayoshi YAMAMORI
c/o Mitsubishi Rayon Co., Ltd.**

**Inventor: Masumi KOBAYASHI
c/o Mitsubishi Rayon Co., Ltd.**

**Inventor: Yoshiro NIEDA
c/o Mitsubishi Rayon Co., Ltd.**

Description

1. Title of the Invention

Hollow Fiber membrane Module

2. Claims

[Claim 1] A hollow fiber membrane module that is fabricated by evenly dispersing and packing a hydrophilic porous hollow fiber membrane A and a hydrophobic porous hollow fiber membrane B at a weight ratio of A:B = 1:0.2 - 2.

[Claim 2] A hollow fiber membrane module according to claim 1, characterized in being fabricated by a knitted hydrophilic porous hollow fiber membrane and hydrophobic porous hollow fiber membrane being overlaid and rolled into a cylindrical shape.

[Claim 3] A hollow fiber membrane module according to claim 1, characterized in that when air is fed from the filtrate side during backwash cleaning, backwash is carried out by generating air bubbles on the hydrophobic hollow fiber surface.

Brief Description of the Drawings

FIG. 1 is a drawing in which two types of knitted hollow fiber membranes, that is, hydrophilic and hydrophobic hollow fiber membranes, are overlaid, and a schematic drawing of the state in which these have been rolled into a cylindrical shape and potted.

FIG. 2 is a schematic cross-sectional view that shows an example of the module of the present model.

Brief Explanation of the Reference Numbers

- 1 knitted hydrophilic hollow fiber membrane
- 2 knitted hydrophobic hollow fiber membrane
- 3 potting portion
- 4 composite of a hydrophilic hollow fiber membrane and a hydrophobic hollow fiber membrane
- 5 outer tube
- 6 fluid intake portion
- 7 fluid discharge portion
- 8 cross-flow filtering-time circulating fluid outflow portion
- 9 backwash-time air inflow portion